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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,978	03/31/2004	Scott D. Coston	1857.0700003	5969
26111	7590	06/30/2005		
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER THOMPSON, TIMOTHY J	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/812,978

Applicant(s)

COSTON ET AL.

Examiner

Timothy J. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-13 and 16-21 is/are rejected.
- 7) ☒ Claim(s) 10, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***IDS***

The foreign references cited on the IDS have not been considered since they were not received by the patent office.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 11-13, 19, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Komatsuda et al. (U.S. Patent App. No. 2003/0160949).

Regarding claim 1, Komatsuda et al. discloses a field defining element (FDE) that generates a field height of an illumination beam(fig 1, 2a); a first zoom system that allows for changing of the field height of the illumination beam(fig 1, 5); a pupil defining element (PDE) that generates a pupil of the illumination beam(fig 1, 40); a second zoom system that allows for changing of the pupil of the illumination beam, whereby the illumination beam is used to illuminate an object plane(fig 1, 7).

Regarding claim 2, Komatsuda et al. discloses the FDE and the PDE are diffractive optical elements(fig 1, 6, para 0114).

Regarding claim 3, Komatsuda et al. discloses the FDE and the PDE are refractive optical element(para 0064).

Regarding claim 4, Komatsuda et al. discloses a relay system positioned before the object plane(fig 1, 12).

Regarding claim 5, Komatsuda et al. discloses a beam homodigization device positioned so that the illlmination beam is homogenized before being received by either the FDE or the PDE(para 0128, being the fly-eye lens homogenizes the light).

Regarding claim 6, Komatsuda et al. does not disclose wherein the FDE is positioned closer to the object plane than the PDE. It would have been obvious to one having ordinary skill in the art at the time the invention was made to place the FDE is positioned closer to the object plane than the PDE, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

Regarding claim 7, Komatsuda et al. discloses wherein the PDE(fig 1, 4) is positioned closer to the object plane than the FDE(fig 1, 2a).

Regarding claim 8, 9, Komatsuda et al. discloses a pattern generator positioned in the object plane being one of a reticle, a contrast device, and a spatial light modulator positioned in the object plane(fig 1, 11).

Regarding claim 11, Komatsuda et al. discloses a transmissive pattern generator positioned in the object plane(fig 1, 11).

Regarding claims 12 and 13, Komatsuda et al. does not disclose wherein the first zoom system changes the field height up to about 2.5 times to about 4 times an original

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field height or the second zoom system changes the pupil up to about 4 times to about 5 times an original pupil. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the field height in the first zoom lens system to about 2.5 times to about 4 times an original field height or change the field height in the second zoom lens system to about 4 times to about 5 times, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 16, Komatsuda et al. discloses a means for varying a field height of an illumination beam(fig 1, 5) ; and means for varying a pupil of the illumination beam, such that radiometric efficiency is continuously maintained.

Regarding claim 17, Komatsuda et al. does means for relaying the illumination beam.

Regarding claim 19, Komatsuda et al. discloses (a) varying a field height of an illumination beam(fig 1, 5); and varying a pupil of the illumination beam(fig 1, 22), such that radiometric efficiency is maintained(fig 1, 21, 20).

Regarding claim 20, Komatsuda et al. discloses (c) relaying the illumination beam(fig 1, 12).

Claims 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi(U.S.Patent No. 5,623,479).

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Regarding claim 16, 19, Takahashi discloses varying a field height of an illumination beam; and varying a pupil of the illumination beam(fig 6, 44), such that radiometric efficiency is maintained(col 7, lines 1-45).

Regarding claim 17, 20, Takahashi discloses (c) relaying the illumination beam(fig 6, 46).

Regarding claim 18, 21, Takahashi discloses (c) measuring a characteristic of the illumination beam; generating a control signal based on the measuring; and controlling at least one of steps (a) or (b) based on a value of the control signal(col 7, see entire column).

### ***Allowable Subject Matter***


Claims 10, 14, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. With the allowable feature being; generator positioned in the object plane being a reflective pattern; a detection system that measures a wavefront of the illumination beam, which is used to control a zoom value for at least one of the first and second zoom systems; a detection system that measures a characteristic of the illumination beam, which is used to control a zoom value for at least one of the first and second zoom systems.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (571) 272-2342. If the examiner can not be reached his supervisor, Georgia Epps, can be reached on (571) 272-2328.

T.J.T.

6/27/05



**TIMOTHY THOMPSON**  
**PRIMARY EXAMINER**